

1 In the claims:

2 1. A method for targeting interactive virtual advertisements, comprising:
3 assigning at least one interactive spot to a program;
4 assigning one or more interactive virtual objects to the at least one virtual advertisement
5 spot;
6 generating a retrieval plan; and
7 providing the retrieval plan to a terminal, wherein the retrieval plan instructs the
8 terminals to select one of the one or more virtual objects.

9 2. The method of claim 1, wherein generating the retrieval plan comprises:
10 assigning the terminal to one or more groups;
11 designating a unique group mask for one or more of the groups; and
12 assigning one or more of the groups to one of the interactive virtual objects, wherein the
13 group mask indicates whether the terminal displays a particular interactive object.

14 3. The method of claim 2, wherein the step of assigning the terminal to one or more groups
15 comprises:
16 generating group assignment rules;
17 delivering group assignment rules to the terminal;
18 storing the group assignment rules at the terminal; and
19 determining one or more group assignments based on the group assignment rules and
20 data related to the terminal.

21 4. The method of claim 3, wherein the data related to the terminal includes one or more of
22 Area of Dominant Influence (ADI), zip code+4, demographic data and programs watched data,
23 virtual objects viewed, on-screen questionnaires and characteristics imported from marketing
24 databases, the group assignments being updated to reflect changes in the ADI, zip code+4,
25 demographic data, programs watched data, virtual objects viewed, on-screen questionnaires, and
26 characteristics imported from marketing databases.

27 5. The method of claim 1, wherein the retrieval plan is sent periodically to the terminal,
28 and wherein the group assignment risks are periodically sent to terminal.

29 6. A method of targeting interactive virtual objects, comprising:
30 providing a program containing one or more interactive virtual object locations;

1 providing interactive virtual objects for one or more of the interactive virtual object
2 locations;

3 providing at least one alternate interactive virtual object for at least one of the one or
4 more interactive virtual object locations; and

5 generating a retrieval plan at a user's terminal, wherein the retrieval plan designates
6 which of the one or more interactive object locations displays an alternate interactive virtual
7 object.

8 7. The method of claim 6, wherein the program is a television program.

9 8. The method of claim 6, wherein the program is one of an advertisement, an electronic
10 program guide, and an Internet web page.

11 9. The method of claim 6, wherein at least one of the interactive virtual object locations is
12 fixed in position across frames of the program.

13 10. The method of claim 6, wherein at least one of the interactive virtual object locations
14 moves spatially in the program with time.

15 11. The method of claim 6, further comprising providing at least one non-interactive virtual
16 object.

17 12. The method of claim 6, wherein the program is broadcast to the terminal, further
18 comprising:

19 creating categories of interactive virtual objects and content;

20 defining group categories;

21 for one or more defined group categories, defining at least one group;

22 assigning one or more television terminals, for the one or more group, to the at least one
23 group;

24 creating a group assignment matrix based on the categories of the interactive virtual
25 objects, the group categories and the group assignment;

26 storing the group assignment matrix in the terminal; and

27 comparing the retrieval plan to the group assignment matrix to determine interactive
28 virtual objects to display in the one or more interactive virtual object locations.

29 13. The method of claim 12, wherein generating the retrieval plan, comprises:

1 assigning the interactive virtual objects to the one or more interactive virtual object
2 locations;

3 assigning the alternate interactive virtual objects to at least one of the one or more
4 interactive virtual object locations;

5 assigning a group to one or more of the interactive virtual objects and the alternate
6 interactive virtual objects;

7 creating a group mask assignment, wherein the group mask assignment is used by the
8 terminal to compare the retrieval plan to the group assignment matrix.

9 14. The method of claim 13, wherein assigning the group to each of the default interactive
10 virtual objects and the alternate interactive virtual objects, comprises:

11 ranking one or more of programs based on categories of targeted interactive virtual
12 objects and a first percentage of total viewers who view one or more of the programs;

13 ranking of targeted interactive virtual objects based on a second percentage of total
14 viewers;

15 determining, for the one or more ranked programs and the targeting categories, targeted
16 interactive virtual objects with overall highest rankings, based on the first and the second
17 percentages;

18 assigning targeted interactive virtual objects with the overall highest rankings to be
19 displayed as the interactive virtual objects; and

20 assigning targeted virtual objects with lower overall rankings to be displayed as the
21 alternate interactive virtual objects.

22 15. The method of claim 13, wherein groups are defined based on characteristics of users.

23 16. The method of claim 15, wherein the characteristics include user demographic
24 information.

25 17. The method of claim 15, wherein the characteristics include user entered information.

26 18. The method of claim 15, wherein the characteristics include programs watched data.

27 19. The method of claim 15, wherein the characteristics include interactive virtual objects
28 watched data.

29 20. The method of claim 15, wherein the characteristics include user activation of the
30 interactive virtual objects.

21. The method of claim 12, wherein the terminal is a television set top terminal.
22. The method of claim 12, wherein the terminal is incorporated into one of a television, a personal computer and a PDA with video viewing capabilities.
23. The method of claim 12, wherein the television terminal is coupled to a satellite television receiver.
24. The method of claim 12, further comprising:
at the terminal, recording in a memory an identification of a virtual object displayed in a virtual object location;
providing the identification to a remote site; and
deleting the identification from the memory.
25. The method of claim 12, wherein the retrieval plan is provided with the transmission of the program and periodically to the terminal, the terminal storing the retrieval plan in a memory.
26. A method of targeting interactive virtual objects to terminals, comprising:
creating a package of targeted interactive virtual objects;
providing the package to one or more of the terminals;
generating a group assignment matrix, wherein the group assignment matrix assigns terminals to groups;
generating a retrieval plan;
storing the retrieval plan at one or more of the terminals; and
providing a program to one or more of the terminals, the program including at least one interactive virtual object location, wherein the retrieval plan designates interactive virtual objects to be displayed during a display of the program.
27. The method of claim 26, further comprising at one or more of the terminals receiving the program, retrieving one of the targeted virtual objects for display in the at least one virtual object location.
28. The method of claim 27, wherein the retrieval step, comprises:
comparing the group assignment matrix to the retrieval plan; and
selecting an interactive virtual object for display based on the comparison.
29. The method of claim 26, wherein one or more of at least one virtual object location contains an interactive virtual object, further comprising:

1 receiving a selection of the interactive virtual object; and
2 linking a terminal selecting the interactive virtual object to an alternate program.

3 30. The method of claim 29, wherein the alternative program comprises an Internet web site.

4 31. The method of claim 26, wherein the step of generating the group assignment matrix,
5 comprises:
6 generating group assignment rules;
7 delivering group assignment rules to terminal; and
8 determining one or more group assignments at one or more of the terminals based on the
9 group assignment rules and individual terminal data and terminal group data.

10 32. The method of claim 31, wherein the individual terminal data, comprises one or more of
11 viewer demographic data, programs watched data, virtual objects viewed data, on-screen
12 questionnaires, and characteristics imported from marketing databases, and wherein the terminal
13 group data, comprises one or more ADI, zip code, and geographical data.

14 33. The method of claim 31, wherein the group assignment rules are stored in one or more
15 of the terminals.

16 34. A terminal for targeting interactive virtual objects, comprising:
17 a connector that receives the interactive virtual objects and interactive virtual object
18 locations and metadata;
19 an interactive virtual objects extractor coupled to the connector that extracts the
20 interactive virtual objects, the locations and the metadata;
21 a storage processor coupled to the extractor that determines which of the extracted
22 interactive virtual objects are targeted to the terminal and saves the targeted interactive virtual
23 objects in a memory; and
24 an interactive virtual object selector processor coupled to the storage processor that
25 determines an interactive virtual object placement for one or more stored interactive virtual
26 objects.

27 35. The terminal of claim 34, wherein the interactive virtual objects are received with
28 programming content, and wherein the extractor extracts the interactive virtual objects from the
29 programming content.

1 36. The terminal of claim 34, wherein the interactive virtual objects are received
2 independently of programming content.

3 37. The terminal of claim 36, wherein the interactive virtual objects are received over the
4 Internet.

5 38. The terminal of claim 34, wherein the terminal is a terminal in a television program
6 delivery system.

7 39. The terminal of claim 38, wherein the terminal is a set top terminal.

8 40. The terminal of claim 38, wherein the terminal is a television.

9 41. The terminal of claim 34, wherein the terminal is one of a personal computer, a personal
10 data assistant, and a wireless telephone.

11 42. The terminal of claim 34, further comprising a placement log coupled to the selector
12 processor that logs the placement of an interactive virtual object and further logs an interactive
13 response to the interactive virtual object, wherein the placement and the response are stored in
14 the memory, and wherein the selector processor uses the placement and the response in
15 determining placements of future interactive virtual objects.

16 43. A system for targeting interactive virtual objects, comprising:

17 an interactive virtual object insertion center that defines interactive virtual object
18 locations in program content for insertion of interactive virtual objects, the insertion center,
19 comprising:

20 an interactive virtual object location definer,

21 an interactive virtual object selector coupled to the definer, and

22 an interactive virtual object manager coupled to the definer and the selector; and

23 a terminal, coupled to the insertion center, that receives interactive virtual objects and
24 the program content having interactive virtual object locations, wherein the terminal, comprises:

25 a location processor that detects interactive virtual object locations in the
26 program content;

27 a selector processor that determines which of the received interactive virtual
28 objects are to be placed in allowable content locations for the interactive virtual objects, and

29 an interactive virtual object trigger processor that receives and processes an
30 interactive selection.

1 44. The system of claim 43, wherein the processed interactive selection is received at the
2 insertion center, and wherein the received selection triggers a response that is sent to the
3 terminal.

4 45. The system of claim 43, wherein the processed interactive selections are retained at the
5 terminal, wherein the received selection triggers a response that is generated at the terminal.

6 46. The system of claim 43, wherein the interactive virtual objects are delivered to the
7 terminal by one of a cable television system, a wireless broadcast system, a satellite broadcast
8 system, a wired data network, a wireless PCS network, and a terrestrial television broadcast
9 network.

10 47. The system of claim 43, further comprising an interactive virtual object retrieval plan,
11 wherein the interactive virtual objects and the retrieval plan are delivered from an interactive
12 virtual object delivery system.

13 48. The system of claim 43, further comprising an interactive virtual object retrieval plan,
14 wherein the interactive virtual objects and the retrieval plan are delivered from the insertion
15 center.

16 49. The system of claim 48, further comprising replacement interactive virtual objects and a
17 replacement interactive virtual object retrieval plan, wherein the replacement interactive virtual
18 objects and the replacement retrieval plan are delivered from the local insertion center.

19 50. The system of claim 43, wherein an interactive virtual object, comprises:
20 an interactive virtual object identifier;
21 interactive virtual object placement rules, wherein the rules provide guidance to the
22 terminal in managing insertion of interactive virtual objects into the program content;
23 an interactive virtual object digital module, wherein the module comprises a digital file of
24 the interactive virtual object; and
25 an interactive virtual object trigger action that defines an action to be taken upon
26 triggering of the virtual object at the terminal.

27 51. The system of claim 50, wherein the interactive virtual object further comprises a virtual
28 object applet that provides software capable of initiation by a source external to the terminal.

29 52. The system of claim 50, wherein the interactive virtual object trigger action initiates an
30 interactive request to a location external to the terminal.

1 53. The system of claim 52, wherein the location external to the system further comprises:
2 an interactive virtual object management center; and
3 an interactive virtual object servicing center coupled to the interactive virtual object
4 management center, wherein the management center provides interactive virtual object response
5 management guidelines to the servicing center, and wherein the guidelines determine an
6 appropriate response based on receipt of an interactive request from the terminal.

7 54. The system of claim 43, wherein the terminal further comprises:
8 an interactive virtual object extractor that extracts interactive virtual objects from data
9 received at the terminal;

10 an interactive virtual object location detector processor, coupled to the extractor, that
11 determines the allowable content locations for the interactive virtual objects; and

12 an interactive virtual object insertion processor, coupled to the selector processor, that
13 inserts the selected interactive virtual objects into the allowable content locations.

14 55. The system of claim 54, wherein the terminal further comprises a storage management
15 processor coupled to the extractor, wherein the management processor uses an interactive virtual
16 object retrieval plan to determine which received interactive virtual objects are to be stored at the
17 terminal.

18 56. The system of claim 43, wherein the interactive virtual objects are selectable by a user at
19 the terminal.

20 57. The system of claim 43, wherein the interactive selection is processed automatically by
21 the terminal.

22 58. The system of claim 43, wherein the terminal further comprises a virtual object
23 placement log, wherein when a virtual object is placed in a virtual object location, the selector
24 processor records the event in the virtual object placement log.

25 59. A method of targeting interactive virtual objects to terminals, comprising:
26 creating a package of targeted interactive virtual objects;
27 providing the package to one or more of the terminals;
28 generating a group assignment matrix, wherein the group assignment matrix assigns
29 terminals to groups;
30 generating a retrieval plan; and

1 providing a program to one or more of the terminals, the program including at least one
2 interactive virtual object location, wherein the retrieval plan designates interactive virtual objects
3 to be displayed during a display of the program.

4 60. The method of claim 59, wherein one or more virtual objects include triggers that
5 initiate a signal from the terminal, the method further comprising:

6 receiving a trigger;

7 retrieving an interactive virtual object trigger action in response to receipt of the trigger;

8 and

9 determining if the interactive virtual object trigger action requires initiation of an
10 interactive request.

11 61. The method of claim 60, wherein the interactive virtual object trigger action requires
12 initiation of the interactive request, the method further comprising:

13 sending the interactive request;

14 awaiting an interactive response; and

15 initiating an interactive action based on the interactive response.

16 62. The method of claim 60, wherein the interactive virtual object trigger action does not
17 require initiation of the interactive request, the method further comprising initiating processing
18 required by the interactive virtual object trigger action.

19 63. The method of claim 59, wherein one or more of at least one virtual object location
20 contains an interactive virtual object, further comprising:

21 receiving a selection of the interactive virtual object; and

22 linking a terminal selecting the interactive virtual object to an alternate program.

23 64. The method of claim 63, wherein the alternative program comprises an Internet web site.